

Engineering



www.scirp.org/journal/eng

Journal Editorial Board

ISSN Print: 1947-3931 ISSN Online: 1947-394X

http://www.scirp.org/journal/eng

.....

Editor-in-Chief

Prof. David L. Carroll

Wake Forest University, USA

Editorial Board

Dr. Murad Y. Abu-Farsakh Prof. Moh'd A. M. Al-Nimr Prof. Abbas Amini Prof. Shahnor Basri Prof. Roberto Capata Prof. Bin Chen Prof. Luisa Durães Dr. Adinel Gavrus Dr. Krzysztof Górski Dr. Sung-Cheon Han Prof. David Hui Prof. Yunho Hwang Dr. Renjie Ji Prof. Jae Moung Kim Dr. Yi-Yang Li Dr. Vandna Luthra Prof. Magdi Mahmoud Prof. Andrzej S. Nowak Prof. Reinaldo Rodriguez Ramos Prof. Yuri Ribakov Dr. P. Sanjeevikumar Prof. Kune Y. Suh Prof. Hongbin Sun Prof. Gui-Hua Tang Prof. Costin D. Untaroiu Dr. Rodrigo Sérgio Wiederkehr Dr. Yufei Wu Dr. Yuanchang Xie Prof. Wei Zhan Prof. Lei Zhang **Prof. Ming Zhang**

Louisiana State University, USA Jordan University of Science and Technology, Jordan Western Sydney University, Australia Putra University, Malaysia University of Roma Sapienza, Italy Xi'an Jiaotong University, China University of Coimbra, Portugal European University of Brittany, France Technical University of Radom, Poland Daewon University College, South Korea University of New Orleans, USA University of Maryland, USA China University of Petroleum, China Inha University, South Korea The Chinese University of Hong Kong, China University of Delhi, India King Fahd University for Petroleum and Minerals, Saudi Arabia Auburn University, USA University of Havana, Cuba Ariel University Center of Samaria, Israel Department of Electrical and Electronics Engineering, South Africa Seoul National University, South Korea Tsinghua University, China Xi'an Jiaotong University, China University of Virginia, USA University of Louisville, USA City University of Hong Kong, China University of Massachusetts Lowell, USA Texas A & M University, USA University of Maryland, USA Schlumberger Limited, USA



Table of Contents

Volume 10 Number 6 June 2018 Present Water Crises in Iraq and Its Human and Environmental Implications 305 N. Al-Ansari, N. Adamo. 305 Double-Ring Infiltrometer for In-Situ Permeability Determination of Dam Material 305 H. Rönnqvist. 320 Electrical Energy Transmission by Several Wires and Reactive Power Problems 329 M. Bank. 329 Research on FAHP Method Based on Highway Bridge Safety 336 C. M. Yang, Q. L. Wang, R. N. Wei, K. Lu. 336 Designing a New Design of a Loading Cylinder for Pneumomechanical Spinning Machines 345

Engineering (ENG) Journal Information

SUBSCRIPTIONS

The *Engineering* (Online at Scientific Research Publishing, <u>www.SciRP.org</u>) is published monthly by Scientific Research Publishing, Inc., USA.

Subscription rates: Print: \$89 per issue. To subscribe, please contact Journals Subscriptions Department, E-mail: <u>sub@scirp.org</u>

SERVICES

Advertisements Advertisement Sales Department, E-mail: service@scirp.org

Reprints (minimum quantity 100 copies) Reprints Co-ordinator, Scientific Research Publishing, Inc., USA. E-mail: <u>sub@scirp.org</u>

COPYRIGHT

Copyright and reuse rights for the front matter of the journal: Copyright © 2018 by Scientific Research Publishing Inc. This work is licensed under the Creative Commons Attribution International License (CC BY). http://creativecommons.org/licenses/by/4.0/

Copyright for individual papers of the journal:

Copyright © 2018 by author(s) and Scientific Research Publishing Inc.

Reuse rights for individual papers:

Note: At SCIRP authors can choose between CC BY and CC BY-NC. Please consult each paper for its reuse rights.

Disclaimer of liability

Statements and opinions expressed in the articles and communications are those of the individual contributors and not the statements and opinion of Scientific Research Publishing, Inc. We assume no responsibility or liability for any damage or injury to persons or property arising out of the use of any materials, instructions, methods or ideas contained herein. We expressly disclaim any implied warranties of merchantability or fitness for a particular purpose. If expert assistance is required, the services of a competent professional person should be sought.

PRODUCTION INFORMATION

For manuscripts that have been accepted for publication, please contact: E-mail: <u>eng@scirp.org</u>

Call for Papers



- Aerospace Engineering
- Agricultural Engineering
- Applied Thermal Engineering Aquacultural Engineering
- Architecture and Civil Engineering
- Automobile Engineering
- Bioengineering
- Biological Engineering
- Biomedical Engineering
- Biomolecular Engineering
- Bionic Engineering
- Bioprocess and Biosystems Engineering
- Biotechnology and Bioengineering
- Building Services Engineering
- Business & Information Systems Engineering
- Cardiovascular Engineering and Technology
- Cellular and Molecular Bioengineering
- Chemical Engineering & Technology
- Civil Engineering
- Coal Science and Engineering
- Coastal Engineering
- Communication Engineering
- Computational Methods in Engineering
- Computer Aided Engineering Computer Applications in Engineering Education
- Computer Engineering
- Computer Methods in Applied Mechanics and Engineering
- Computer-Aided Civil and Infrastructure Engineering
- Crystal Engineering
- Data and Knowledge Engineering
- · Earthquake Engineering & Structural Dynamics
- Ecological Engineering
- Electrical and Electronic Engineering
- Energy and Power Engineering
- Energy Engineering
- Energy Systems Engineering
- Engine Engineering
- Engineering Analysis with Boundary Elements
- Engineering and Technology Management
- Engineering Applications of Artificial Intelligence

Book Reviews—Comments and critiques.

Website and E-Mail

http://www.scirp.org/journal/eng

🗙 Notes for Intending Authors

- Engineering Cybernetics
- Engineering Economy
- Engineering Education

Engineering (ENG)

ISSN Print: 1947-3931 ISSN Online: 1947-394X http://www.scirp.org/journal/eng

Engineering is an international journal dedicated to the latest advancement of engineering. The goal of this journal is to provide a platform for engineers and academicians all over the world to promote, share, and discuss various new issues and developments in different areas of engineering. All manuscripts must be prepared in English, and are subject to a rigorous and fair peer-review process. Accepted papers will immediately appear online followed by printed hard copy. The journal publishes original papers including but not limited to the following fields:

- Engineering Failure Analysis
- Engineering for Sustainability
- Engineering Fracture Mechanics
- Engineering Geology and the Environment
- Engineering in Life Sciences
- Engineering in Medicine
- Engineering Manufacture
- Engineering Materials
- Engineering Mathematics
- Engineering Physics and Thermophysics
- Engineering Science in Medicine
- Engineering Structures
- Engineering Tribology
- Engineering with Computers
- Environmental Engineering
- Environmental Science & Engineering
- Fire Protection Engineering
- Food Engineering
- Food Process Engineering
- Fusion Engineering and Design
- Fuzzy Information and Engineering
- Geophysics and Engineering Geotechnical and Geological Engineering
- Green Energy Engineering
- Industrial Engineering
- Landscape and Ecological Engineering
- Macromolecular Materials and Engineering
- Macromolecular Reaction Engineering
- Magnetic Resonance Engineering
- Maintenance Engineering
- Management Engineering
- Maritime Engineering
- Materials Science and Engineering
- Mechanical Engineering
- Mechatronics Engineering
- Medical Engineering & Technology
- Metabolic Engineering
- Metallurgical Engineering
- Microelectronic Engineering
- Micromechanics and Microengineering
- Military Engineering
- Mineral Resources Engineering

We are also interested in: 1) Short Reports-2-5 page papers where an author can either present an idea with theoretical background but has not yet completed the research needed for a complete paper or preliminary data; 2)

Submitted papers should not be previously published nor be currently under consideration for publication elsewhere. Paper submission will be handled electronically through the website. For more details, please access the website.

- Mining Engineering
- Molecular Engineering

Email: eng@scirp.org

Nanoengineering

- Natural Gas Science and Engineering
- NeuroEngineering and Rehabilitation
- Nuclear Engineering and Design
- Numerical Methods in Engineering
- Ocean Engineering
- Oil Engineering

 Particle Engineering Petroleum Engineering

Power Engineering

Process Engineering

Radar Engineering

Innovation

Test Engineering

Transportation Engineering

•

•

Production Engineering

Public Safety Information

- Optics and Lasers in Engineering
- Optimization and Engineering

• Petroleum Science and Engineering

Probabilistic Engineering Mechanics

Rare Metal Materials and Engineering

Rock Mechanics and Rock Engineering

Software and Knowledge Engineering

Sports Engineering
Strain Analysis for Engineering Design

Structural Engineering and Materials

Systems and Control Engineering

Systems and Software Engineering

Soil Dynamics and Earthquake Engineering

Social and Environmental Impact of Engineering

Surface Engineering and Applied Electrochemistry

Systems Assurance Engineering and Management

Tissue Engineering and Regenerative Medicine

Wind Engineering and Industrial Aerodynamics

Renewable Energy Engineering

RF and Microwave Engineering

Science and Engineering Ethics

Safety Systems Engineering

Requirements Engineering

Precision Engineering and Manufacturing

Protein Engineering, Design and Selection

Reliability, Quality and Safety Engineering

Polymer Engineering and Science

What is SCIRP?

Scientific Research Publishing (SCIRP) is one of the largest Open Access journal publishers. It is currently publishing more than 200 open access, online, peer-reviewed journals covering a wide range of academic disciplines. SCIRP serves the worldwide academic communities and contributes to the progress and application of science with its publication.

What is Open Access?

rt and De

Advances in

dvances in Biologica

Entomology

All original research papers published by SCIRP are made freely and permanently accessible online immediately upon publication. To be able to provide open access journals, SCIRP defrays operation costs from authors and subscription charges only for its printed version. Open access publishing allows an immediate, worldwide, barrier-free, open access to the full text of research papers, which is in the best interests of the scientific community.

- High visibility for maximum global exposure with open access publishing model
- Rigorous peer review of research papers
- Prompt faster publication with less cost

Engineering

Guaranteed targeted, multidisciplinary audience



Soft

Website: http://www.scirp.org Subscription: sub@scirp.org Advertisement: service@scirp.org